Dermatitis is for the birds

- 27 FEB 2001.
  - 52 y/o lady. Noted irritant sore on volar right wrist, struck on edge of counter when using computer. Given topical hydrocortisone cream.

- 13 MAR 2001.
  - Skin lesion not improved. “Quarter size annular open lesion…light yellow fluid oozing…” Given topical antibiotic…apply TID. F/U Occupational Medicine Clinic

- 14 MAR 2001.
  - 52 y/o lady. Following RIF in North Carolina, working since 29 Jan 2001 at PWC NASP, tool room, checks out equipment. Left volar wrist lesion 1.5 X 2 cm. Raised erythematous rash, clear drainage at edge. (Also notes eczematous drainage of ear lobes…ear rings removed.)

- 19 MAR 2001.
  - Enlarging lesion with erythematic, blister formation. ? Adhesive allergy rash due to Band-Aid? Add Benadryl HS for severe itching

- 27 MAR 2001.
  - Wrist wound open and weeping. Itching. Excoriated “satellite” lesions with appearance of dyshidrotic eczema. Face puffy and ear lobes swelling and draining. Puritic. No relief with H2O2. Use of aloe vera lotion. Request urgent dermatology consultation.

- 06 APR 2001.
  - No dermatology consult obtained. Seen in ER 28 Mar. Given medrol dose pack, oral keflex, topical antibiotic ointment. Worsened facial edema, enlarging wrist lesion with continued satellite eczematoid lesions. Request IH/PM Consult, as patient expresses concern over bird droppings over computer and work space.

Public Health Detectives

Protecting Human Health

Preparation for site visit

- What are our concerns?

  Although most people see birds as an important and pleasing part of the environment (and in most cases, rightly so), there are some of us that have to deal with the uglier side of birds - their droppings

Preparation for site visit

- What do we know?

  * Employee stated that birds occupied the workcenter.
  * Complaints of bird roosting above work counter
  * Complaints about bird excrement and debris polluting work surfaces

Preparation for Site Visit

- What are our concerns?
  * Zoonotic diseases are diseases that are transmissible from animals to humans
  * Many diseases can be transmitted by wild birds
  * Elderly adults and individuals with poorly functioning immune systems are at the greatest risk of being infected by a zoonotic disease

Health risks from exposure

Bacterial diseases may be present in bird waste can cause a multitude of diseases in humans

fowl typhoid, infectious coryza, ulcerative enteritis, vibriosis, pasteurellosis, listeriosis, pullorum disease, tuberculosis, erysipeloid, paratyphoid, salmonellosis and pirochetosis.

Health risks from exposure

Mycotic diseases are caused by fungi and are usually transmitted through the inhalation of airborne spores, causing a variety of pulmonary, bloodstream and other infections

aspergillosis, candidiasis, cryptococcosis, sarcosporidiosis. blastomycosis and histoplasmosis

Health risks from exposure

Protozoal diseases diseases are caused by parasites that can be present in bird droppings and transmitted to humans via contact or inhalation of airborne protozoa. These diseases produce flulike symptoms (fever, cough, fatigue and muscle aches) in humans

American trypansomiasis, haemoproteus and leucocyto-zoonosis, trichomoniasis, coccidiosis and toxoplasmosis.

Health risks from exposure

Parasites that can reside in certain birds, causing possible transmission of infectious diseases to humans via contact with bird droppings or that may be carried and passed on by birds and their waste

Parasitic cestodes: davaubea proglottina and railletina tetragona and taeniasis. Parasitic nematodes: eyeworm, gapeworm, capillariasis, dispharyxiasis and tetramariasis

Health risks from exposure

Parasitic trematodes (flatworms) that can be passed from birds to humans

brachylaemus commutatus, brachylaemus fuscatus, cotylurus cornutus, echinoparyphium paraulum, cryptocoyle convacum, echinoparyphium recurvatum, Echinostoma revolutum, haplorchis pumilio, hypoderaeum conoideym, plagiorchis murus, postharmostomum gallinium, riberiola ondatrae, collyriculum faba, schistomiasis, tamerlania bragai and acariasis.

Health risks from exposure

Viral diseases caused by obligate intracellular parasitic viruses, attack the immune system by destroying cells. Contact with bird droppings can cause many debilitating and deadly viral infections.

West Nile encephalitis and meningitis, Venezuelan encephalitis, Western equine encephalitis, transmissible gastroenteritis, Eastern equine encephalitis, St. Louis encephalitis, Newcastle disease and pox

Health risks from exposure

What are the symptoms of West Nile encephalitis?

Most infections are mild, and symptoms include fever, headache, and body aches, occasionally with ***skin rash*** and swollen lymph glands.

Health risks from exposure

Rickettsial and chlamydial diseases. Exposure to discharges of infected birds may cause various infections with symptoms such as fever, headache and ***rash***

Q fever and chlamydiosis.

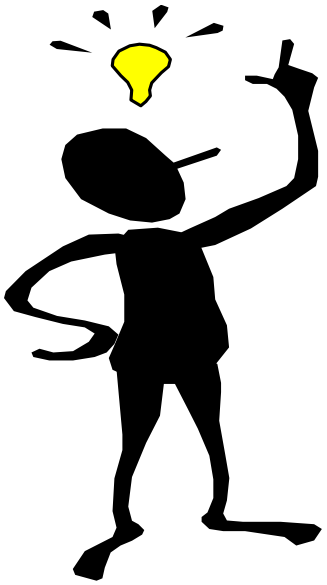
Narrowing the Possibilities

Formulating a Hypothesis

Patient's Symptoms included - Rash

Allegations of possible connection to birds

Bird related conditions with potential manifestation
of rash



*** West Nile Encephalitis * Rickettsial Diseases**

*** Chlamydial Di**

Site Visit Findings (9 Apr)

- Open bay-type doors allowing free movement of birds
- Signs of active resident bird population
  * Nests/roosts
  *Traces of bird excrement on common walk-ways (low exposure potential)
  * Employee work counter had no evidence of bird excrement**. (Hypothesis shattered)**

WHY!!

2083
26 EA
BATTERIES AT CHECK-OUT
A CLEAN WORK ARE
IS A SAFE WORK ARE
CUSTOMER SERVICE

Site Visit Findings

- Employee admitted to cleaning work surface daily to remove debris & bird excrement
- Stated that she had to “Get rid of the bird poop so she could work”.
- Admitted to vigorous cleaning with “spray cleanser”

Site Visit Findings

- Broken laminate on counter top with jagged edges
- Prior to medical manifestations, no wrist support for keyboard was provided (Ergonomic)
- Employee admitted to skin being scratched periodically by jagged counter top before keyboard tray was installed

A PRAYER FOR THE DAY
AOC
YOU HAVE
TO HAVE
HAVE A NICE DAY

Site Visit Findings

Cleaning solution questions.

- Is it potent enough to sanitize surface?

- Does it remove health hazards?

- Is it safe?

A CLEAN WORK AREA,
IS A SAFE WORK AREA
CUSTOMER

Site Visit Findings

Cleaning solution examined.

- Spartan tough-duty/Industrial strength degreaser
- Obtained from neighboring PWC shop
- Employee never saw MSDS
- Label stated “Caution: may cause eye or skin irritation, and some may be sensitive to ingredients”

Site Visit Findings

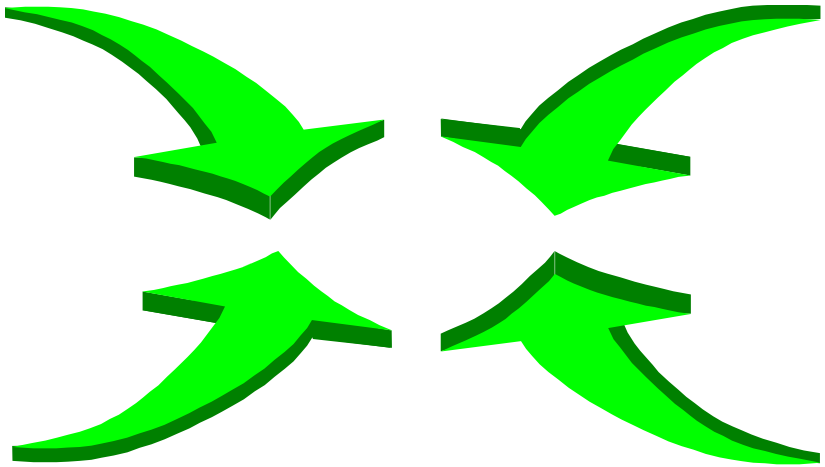
Cleaning solution examined.

- Employee admittedly never read the label

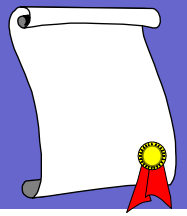
- Solution contained Ethylene glycol monobutyl ether, Isopropanol and other acids.

Correlating The Facts

- Skin integrity compromised by poor ergonomics and structural integrity of work surface (patient related history)
- Harmful chemical inappropriately used
- Chemical known to potentially cause dermal manifestations
- No PPE used
- Bird related exposure event benign



Recommendations



- Coordinate bird-proofing (exclusion), removal of roosts, habitat removal (Pest Control Shop)
- Sanitation initiatives (cleaning & sanitizing) schedule. Methods for “wet cleaning”. Minimize aerosolized particles. Substitute safer product for surface cleaning
- Appropriate PPE for cleaning crew (MSDSs)

Outcome

- Recommendations acted on by command
- No other patient symptoms or related complaints from workcenter in question
- Patient outcome??

- 10 APR 2001.
  - Given hydrocortisone cream 2% to apply to wrist, facial and neck lesions.
- 17 APR 2001.
  - Greatly improved.

- 22 MAY 2001.
  - Facial edema and erythema resolved. Wrist lesion improved, but persistent hyper pigmented wrist lesion changes persist through follow-up 14 AUG 2001.

Cross-Discipline Communication is